

What kinds of geospatial information is required for disaster management

*Yuki Kurisu¹, Hiroshi Une¹

1.GSI of Japan

Application of geospatial information has been rapidly spreading in a variety of fields as technology advances. Particularly in disaster prevention and mitigation field, it plays critical role in all stages such as visualizing of disaster risk (hazard mapping), grasping overall situation of damage, supporting rescue and relief activities, underpinning recovery and revitalization planning and sharing of disaster information. The importance of geospatial information for disaster reduction is widely recognized in international community as described in Sendai Framework for Disaster Risk Reduction 2015-2030. In this presentation, we will discuss the role of geospatial information under the situation of disaster.

We categorized the role of geospatial information in the event of disaster into four; 1) grasping the overall situation of disaster rapidly and precisely (e.g. aerial photo taking, remote sensing, aerial photo interpretation, mashup and visualization of information on map); 2) surveying the change of land in detail (e.g. crustal deformation observation, InSAR analysis); 3) providing the basis for reconstruction and revitalization (e.g. resurvey of control points, large-scale map for reconstruction planning, process management using GIS); and 4) analyzing the disaster to prepare subsequent disasters which can occur in the future (e.g. analysis of crustal deformation, fault modelling, geographic survey, update of disaster reduction plan).

To scrutinize the actual utilization of geospatial information, we carried out a questionnaire survey targeted to national and local organizations which took part in disaster management after the completion of the first stage of response for the Kanto-Tohoku heavy rain disaster in September 2015. Following five major works were extracted based on the results; damage prediction, understanding damage situation, work plan, materials for supporting emergency forces and disaster damage assessment. In particular, detailed elevation data were used for estimation of the flooded area, and aerial images were effective for understanding the disaster situation in detail. In addition, the result of interpretation for the flooded area was used to operation planning and orthographic images were utilized for a field survey and damage assessment.

In disaster response, rapidness, sureness and effectiveness of correspondence are essential. Therefore, the following two viewpoints are important for the effective use of geospatial information in disaster response; ready for use, and reliable. GSI will continuously provide useful geospatial information to support disaster response, rescue work and restoration activities under the close relationship with disaster management organizations.

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